U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

Ms. Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street S.W.
Washington, D.C. 20554

September 14, 2010

Dear Ms. Dortch:

This letter is written in support of Proceeding Number 10-167, Curtiss-Wright Controls, Inc.'s (CWCI) request for a waiver of Sections 15.503(d) and 15.521(d) of the Commission's rules to permit the marketing and operation of its stepped frequency Ground Penetrating Radar (GPR) system known as 3-d Radar. My primary responsibility as the Federal Railroad Administration (FRA), Office of Research and Development, Track Research Division's Program Manager for GPR related research, is to promote and develop research activities that advance all aspects of public safety associated with the safe operations and maintenance of railroad track throughout the country. As such, the fouling and degradation of ballast, which is the granular structural support material that transmits and distributes the load of railroad track and railroad rolling equipment/stock to the supporting subgrade, is an area of chief concern. GPR is currently the only non destructive inspection tool that can provide track substructure condition assessment (ballast, sub-ballast) by determining the extent and degree of fouled ballast as well as the location and extent of trapped moisture within the ballast itself. The combination of fouled ballast and trapped moisture contribute to unsafe and unstable track conditions that if left undetermined or un-assessed, can lead to tragic train derailments that may otherwise be preventable or less likely to occur with the help of GPR.

Stepped frequency GPR is of particular interest to the FRA for several reasons. The technique enables a good combination of both resolution of captured data and penetration depth of track substructure. Better utilization of transmitted power offers the potential of better coverage and higher vehicle assessment speeds on the track, which reduces track closures while increasing productivity during the data collection phase. The ability to assess track substructure at higher speeds is of particular relevance, as we construct high speed rail corridors throughout our country. Because step frequency GPR sends less power into the ground, there is less susceptibility of other energy sources interfering with the GPR signal and corrupting collected data. Also, the reduced amount of energy directed into the ground means that stepped frequency GPR will have less of a chance of interfering with these other energy sources as well.

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FRA's Track Research Division, is presently funding a program with the American Association of Railroads' (AAR) Transportation Technology Center Inc. (TTCI) in Pueblo, CO., which includes a formal evaluation of GPR technologies that will assist in the development of FRA guidelines for the implementation of GPR technology by North American railroads and also includes the future deployment of a GPR system on an FRA research vehicle in support of FRA's high speed rail initiatives. It is essential that CWCI's 3d-Radar system be included in this FRA evaluation of GPR technologies so as to comprehensively evaluate one of the leading GPR systems used worldwide. To accommodate 3d-Radar's inclusion in this evaluation process, it is the FRA Track Research Division's wishes, but more importantly in the public interest that CWCI be granted its request for waiver.

Sincerely,

Hugh B. Thompson II

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